

## College of Agriculture & Life Sciences

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Director of College Leadership & Strategy

Agriculture and Forestry Awareness Study Commission  
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*Growing People, Programs and Partnerships*

# Agriculture in NC is STRONG/GROWING

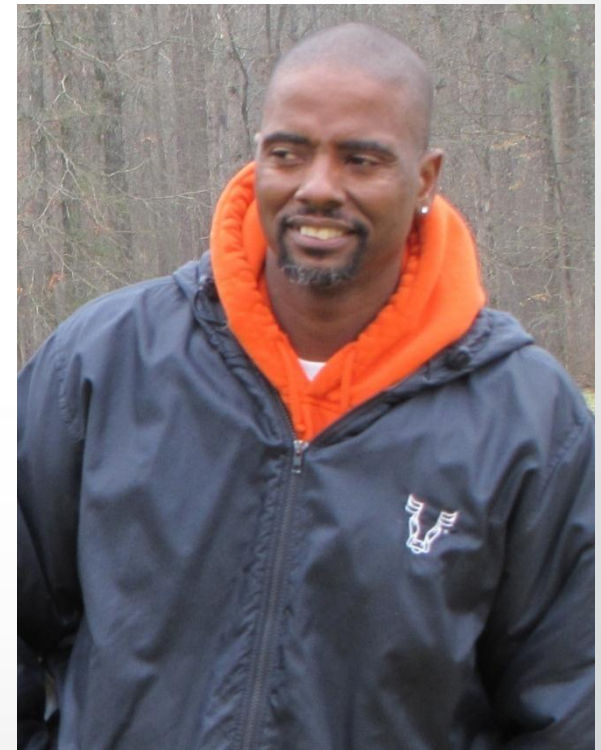
Agriculture and Agribusiness generate  
**\$77 billion** or **17.5%**  
of \$440 billion annual gross state product  
**\$67.4 billion** comes from Food Industries





# Agriculture is Key to our Economy

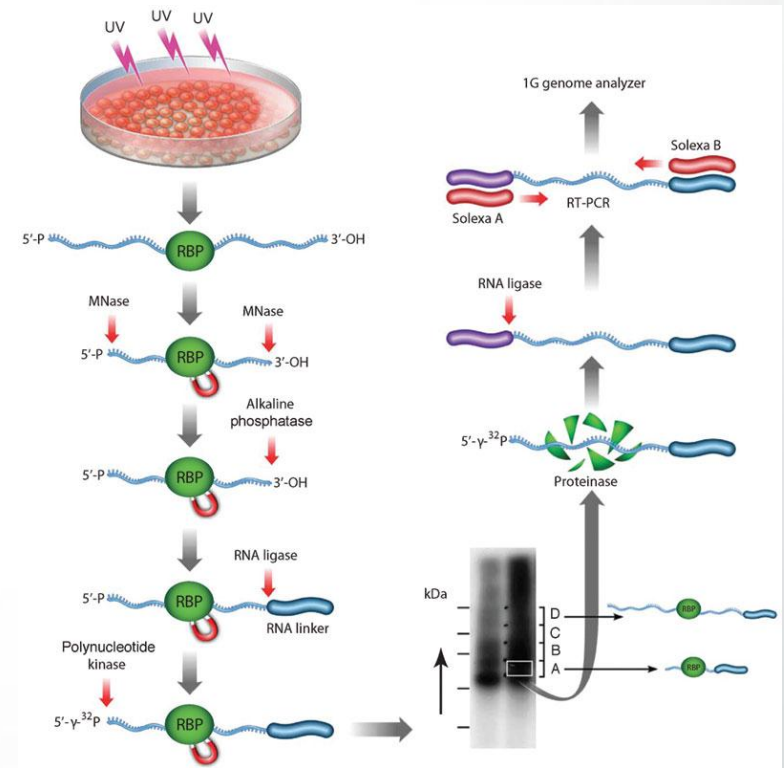
Agriculture and agribusiness account for **642,000** or **17%** of the state's 3.8 million **jobs**.



# Life Science Opportunities are GROWING

# North Carolina Life Sciences

- > 520 bioscience companies
- Nearly 60,000 jobs
- NC ranks 3<sup>rd</sup> in # of companies



# CALS Vision and Mission

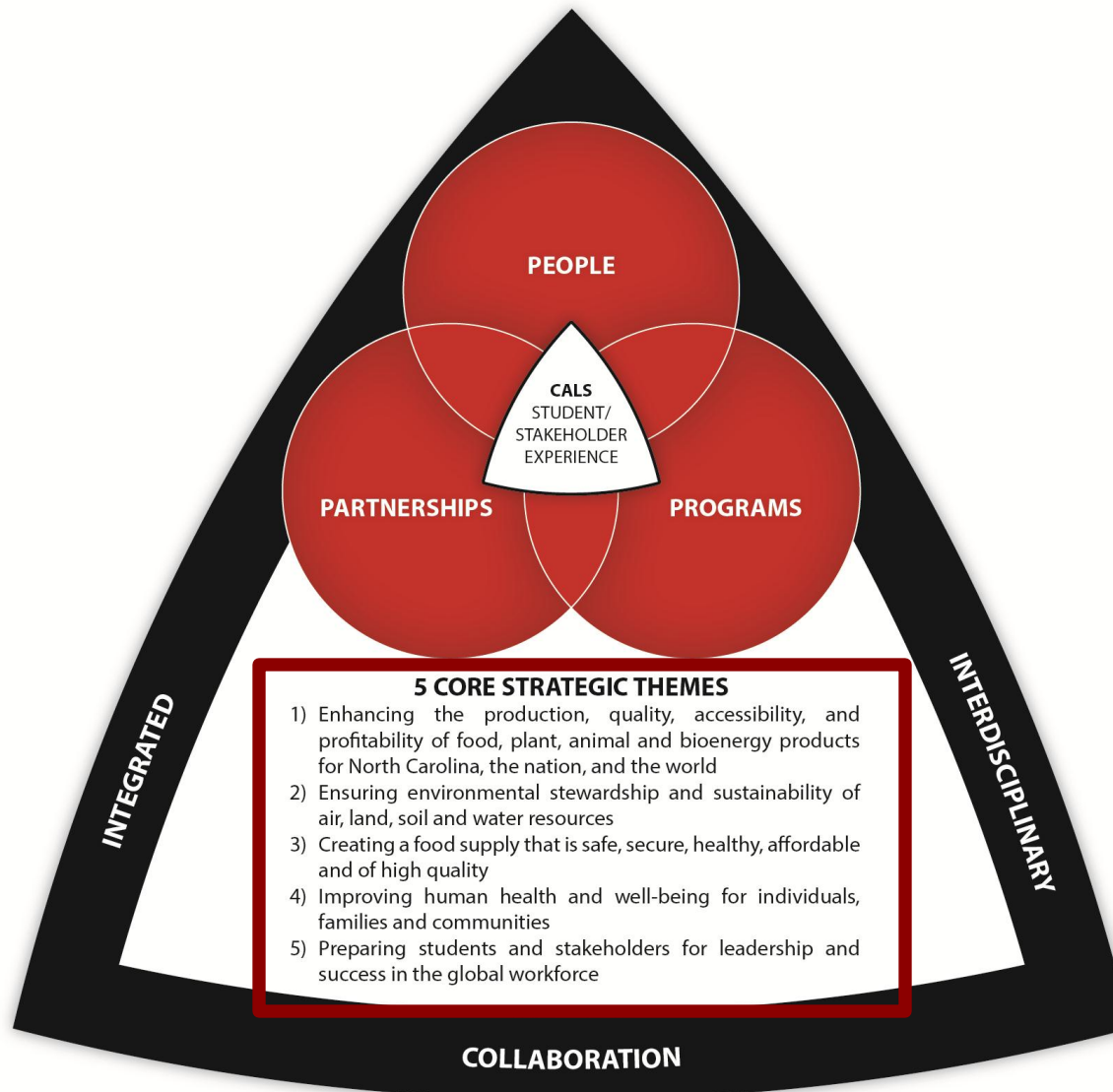
## Vision

Create social and **economic prosperity** and well-being for the state, nation and world through **agriculture and life science discovery, learning and engagement.**

## Mission

CALS leads **partnership-driven discovery, learning and engagement.** We **prepare students**, create and apply unbiased knowledge through advances in science and technology and drive economic development to improve the quality of life in NC, our nation and the world.... we achieve new scientific breakthroughs that translate into discoveries and meet grand challenges involving **food, farming, fiber, feed, families, health, energy, water and the environment.**

# Overall Picture of CALS at NCSU



In White: Our Target

- Student and Stakeholder Experience

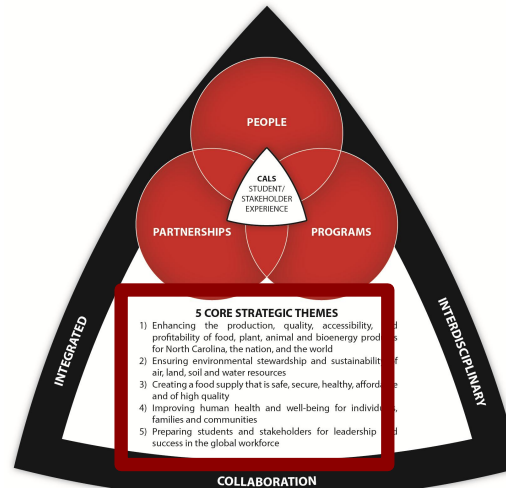
In Red: What we will grow

- People, Programs, Partnerships

In Black: Our Behavior

- Interdisciplinary, Integrated, Collaboration

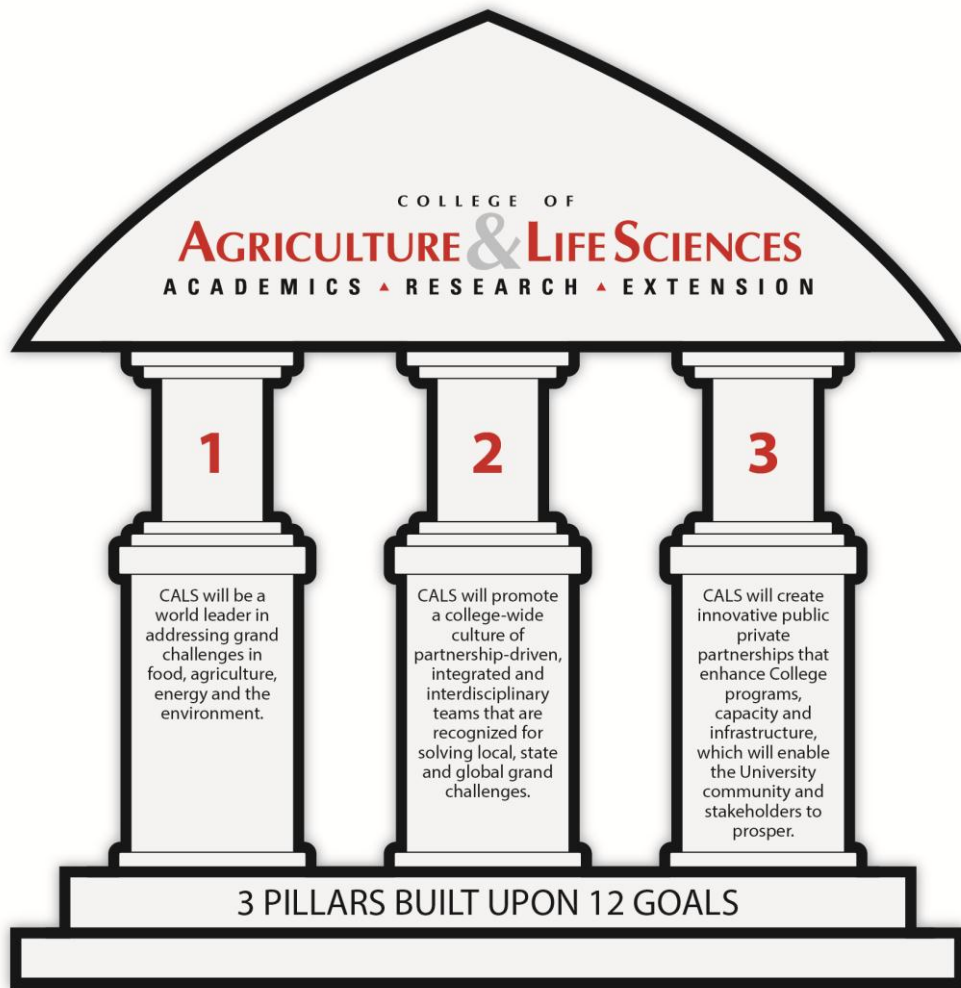
# 5 Core Strategic Themes



1. Enhancing production, quality, accessibility and profitability of foods
2. Ensuring environmental stewardship and sustainability
3. Creating a safe and healthy food supply
4. Improving human health
5. Preparing students and stakeholders for leadership



# Outcomes: “Pillars of Excellence”



**Pillar 1:** CALS will be a world leader in addressing grand challenges in food, agriculture, energy, and the environment.

**Pillar 2:** CALS will promote a college-wide culture of partnership-driven, integrated, and interdisciplinary teams that are recognized for solving local, state, national, and global grand challenges.

**Pillar 3:** CALS will create innovative public-private partnerships that enhance College programs, capacity, and infrastructure which will enable the University community and stakeholders to prosper.



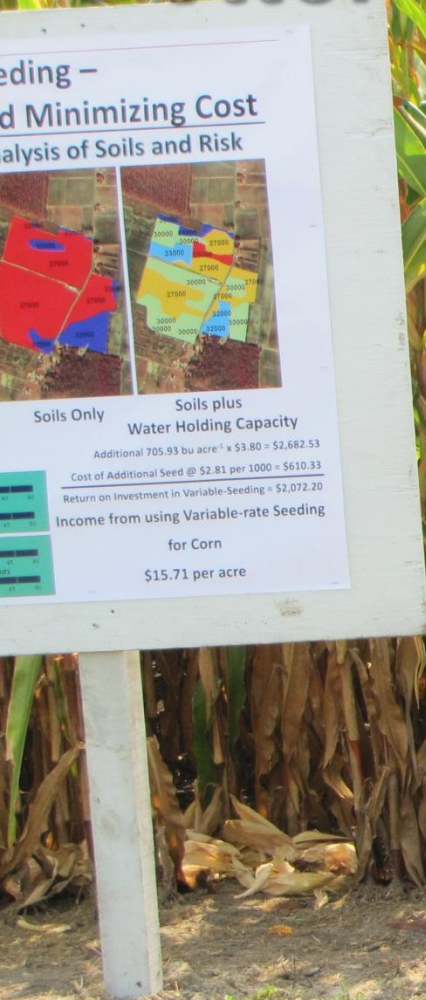
# We are making plants better through Plant Breeding

Dr. Susana Milla-Lewis





# Better Practices = Increased Yield



SEEDING RATE  
23,000  
seeds per acre

SEEDING RATE  
28,000  
seeds per acre

SEEDING RATE  
33,000  
seeds per acre

Dr. Ron Heiniger

2000: 10 growers had yields of 225 bushels/acre

2012: >200 growers had yields of 225 bushels/acre

Average yield of corn as a whole is up more than 25%



# We keep bugs and disease away

Dr. Fred Gould





# Partnerships for Progress



Dr. Mary Ann Lila

## Plants for Human Health Institute



# Exceptional Feed Mill Program

Dr. Adam Fahrenholz



# Global Leaders in Waste Management



Dr. Mike Williams



# Food Safety Programs

A photograph of two scientists in a laboratory setting. A man in a white lab coat and blue gloves is working at a biosafety cabinet, while a woman in a white lab coat and orange scarf stands next to him, gesturing with her hands as they discuss. The background shows various lab equipment and supplies.

- Good Agricultural Practices
- HACCP
- Food Plant Sanitation
- Good Manufacturing Practices
- Better Process Control School
- ISO Standards
- GFSI/SQF Programs
- Food Safety Modernization Act

# BIG Ideas and KEY Initiatives

## **What are the NEXT ideas that...**

- bring together many departments/units/disciplines within CALS and have a foundation of interdisciplinary collaboration,
- greatly strengthen collaboration with other Colleges at NCSU,
- effectively integrate the missions of research/teaching/outreach/international programs,
- benefit by the interaction and partnership with external stakeholders,
- build on current strengths of CALS,
- provide a better experience and opportunities for our students,
- create a competitive niche for NC State where external funding is and will be available,
- are innovative/provide leadership in moving our science/scholarly presence forward,
- help to solve grand global challenges
- will have “leadership champions” in CALS.



# What are the BIG IDEAS and KEY Initiatives?



## Current BIG IDEAS Being Assessed

- *Plant Sciences Initiative*
- *Student Access to 4-year Degree*
- *Stakeholder Leadership Programs*

# One BIG IDEA!

## **Plant Sciences Initiative**

- Plant Breeding Program
- Plant Stress (Kenan)
- AMPLIFY
- Alternative Animal Feed
- Bio-energy
- Ecology/Water/Sustainability
- Nutrition
- **Plant Sciences Complex**

# Plant Sciences Research Complex

**The Premier Plant Sciences Infrastructure in the Country**

## **Key Features:**

- 2 Leasable Corporate lab suites: 18,000 GSF
- Classroom/Seminar space: 3,000 GSF
- Hearth/Atrium space: 4,000 GSF
- Miscellaneous (housekeeping/loading dock/mail): 3,000 GSF
- Administrative suite: 2,000 GSF
- Faculty offices/research labs: 150,000 GSF
- 60-65 Plant Sciences Research Faculty
- BSL3 Greenhouse on the roof: 8,000 GSF
- BSL2 compliant connection to BTEC
- Additional ~20,000 GSF glasshouse at Partners II site



**Thank You!**

***The NC State University  
College of Agriculture and Life  
Sciences....***

***We Grow our People,  
our Programs,  
and our Partnerships Everyday!***



A large crowd of young people, mostly wearing red shirts, are shown from the chest up. They are all cheering with their hands raised in the air, some making 'V' signs. The scene is brightly lit, suggesting an outdoor event like a sports game or festival. The text 'Questions? ... Discussion' is overlaid in white on the right side of the image.

**Questions?  
... Discussion**